

## REMARKS

The above amendment has been made in response to the outstanding Final Office Action dated May 27, 2010 and the Advisory Action dated November 2, 2010. The Examiner's reconsideration is respectfully requested in view of the above amendments and the following remarks.

Claims 13 and 39 have been amended to more clearly define the claimed invention. Claims 14, 15, 21-28, 30-37 and 40 have been cancelled. Claims 1-12, 29, 38 and 41 have previously been cancelled.

Claims 13, 16-20 and 39 are pending in the present application for re-consideration by the Examiner upon entry of the present Response.

### **Claim Rejections Under 35 U.S.C. § 102**

Claims 13, 15, and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Schwartzwald et al. (U.S. Patent No. 3,090,094; hereinafter, "Schwartzwald").

In response, Claim 13 has been amended to further define the claimed inorganic adhesive solution and to add a curing step in which carbon dioxide gas is used to cure the further defined inorganic adhesive solution. Claim 15 has been cancelled.

Claim 20 is directly dependent from the amended Claim 13.

That is, the amended Claim 13 includes, inter alia, the following limitation:

the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium silicate and lithium silicate;  
a curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution and form the ceramic body in the pores of the polymer sponge and to thereby form the porous composite  
(Emphasis added)

Applicants submit that Schwartzwald is silent *at least* as to the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium

silicate and lithium silicate and the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution.

It is therefore respectfully submitted that Schwartzwalder does not anticipate Applicants' claimed invention since it does not contain *each and every limitations as set forth* in the amended Claim 13.

Claim 20 is also believed not anticipated by Schwartzwalder, by virtue of its direct dependency from Claim 13.

Applicants respectfully request the Examiner to review these submissions and withdraw the rejection of Claims 13, 15 and 20 under 35 U.S.C. §102(b).

### **Claim Rejections Under 35 U.S.C. §103**

#### Rejection of Claims 14, 16, 19, 21-24, 27, 28, 30-33, 36, 37, 39 and 40

Claims 14, 16, 19, 21-24, 27, 28, 30-33, 36, 37, 39 and 40 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Schwartzwalder in view of Bhaduri (Science and Technology of Ceramic Foams).

Claims 14, 21-24, 27, 28, 30-33, 36, 37 and 40 have been cancelled.

Claims 16, 19 and 39 are directly dependent from the amended Claim 13.

For an obviousness rejection to be proper, the Examiner is expected to meet the burden of establishing why the differences between the prior art and that claimed would have been obvious. (MPEP 2141(III)) "A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." To find obviousness, the Examiner must "identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does." *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007)

As discussed above in connection with the 102 rejection, Schwartzwalder fails to teach the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium silicate and lithium silicate and the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution, as recited in the amended Claim 13.

Bhaduri is directed to ceramic forma. However, Applicants submit, Bhaduri, either alone or in combination with Schwartzwalder, but fails to teach the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium silicate and lithium silicate and the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution, as recited in the amended Claim 13.

It is therefore submitted that neither Schwartzwalder nor Bhaduri, either alone or in combination, reach the subject matter claimed in the amended Claim 13, and thus *prime facie* obviousness does not exist regarding the subject matter claimed in Claim 13 with respect to the cited references.

Applicants respectfully submit that the amended Claim 13 is now allowable over Schwartzwalder and Bhaduri.

Claims 16, 19 and 39 are also believed to be allowable, by means of their direct dependencies from Claim 13.

Applicants respectfully request the Examiner to review these submissions and withdraw this rejection under 35 U.S.C. §103(a).

#### Rejection of Claims 18, 26 and 35

Claims 18, 26 and 35 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Schwartzwalder in view of Bhaduri, and further in view of Gill (Environmentally Safe Binders for Agglomeration)

In response, Claims 26 and 35 have been cancelled.

Claim 18 is directly dependent from the amended Claim 13.

As discussed above, Schwartzwalder and Bhaduri, either alone or in combination, fails to teach the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium silicate and lithium silicate and the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution, as recited in the amended Claim 13.

Gill is directed to environmentally safe silicate binder. However, Gill, either alone or in combinations with Schwartzwalder and Bhaduri, fails to teach *at least* the claimed the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution, as recited in the amended Claim 13.

It is therefore submitted that Schwartzwalder, Bhaduri and Gill, either alone or in combination, can not reach the subject matter claimed in the amended Claim 13, and thus *prime facie* obviousness does not exist regarding the subject matter claimed in Claim 13 with respect to the cited references.

Applicants respectfully submit that the amended Claim 13 is now allowable over Schwartzwalder, Bhaduri and Gill.

Claim 18 is also believed to be allowable, by means of its direct dependency from Claim 13.

Applicants respectfully request the Examiner to review these submissions and withdraw this rejection under 35 U.S.C. §103(a).

Rejection of Claims 13, 16, 17, 21, 24, 25, 30, 33, 34, 39 and 40

Claims 13, 16, 17, 21, 24, 25, 30, 33, 34, 39 and 40 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Chu et al. (Hydroxyapatite implants with designated internal architecture; hereinafter, “Chu”).

Claims 21, 24, 25, 30, 33, 34 and 40 have been cancelled.

As discussed above, Claim 13 has been amended to further define the claimed subject matter.

Claim 13 is an independent claim. Claims 16, 17 and 39 are directly dependent from the amended Claim 13.

Regarding Claim 13, the Examiner has asserted in the Office Action as follows:

CHU teaches a method for preparing a ceramic body wherein the method comprises an impregnation step of an inorganic adhesive solution into a porous structure (fig 1. Suspension casting) and drying the coated porous structure by curing (fig. 1 Suspension curing). CHU is silent to partially removing some of the inorganic adhesive solution in a dewatering step, however, it would have been obvious to one of ordinary skill in the art that the inorganic adhesive of CHU would have been partially removed CHU discloses that the solution flows easily (section 3.2) which would indicate that the solution may have exited the porous structure unintentionally.

Chu is directed to bone and tooth implants and discloses well-defined three-dimensionally interconnected channels with controlled porosity of 26-52%. Chu uses powders and bonders as starting materials and involves “mold and binder removal” and “sintering” processes, as shown in Fig. 1 thereof. Chu’s powder sintering process is basically different from the claimed invention, in terms of their purposes, configurations to achieve those different purposes, and associated results. Applicants argue that a person having ordinary skill looking at Chu would not be tempted to modify or combine Chu with other references to obtain the claimed invention.

Further, Chu fails to teach the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium silicate and lithium silicate and the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution, as recited in the amended Claim 13.

It is therefore submitted that thus *prime facie* obviousness does not exist regarding the subject matter claimed in Claim 13 with respect to the Chu reference.

Applicants respectfully submit that the amended Claim 13 is now allowable over Chu.

Claims 16, 17 and 39 are also believed to be allowable, by means of their direct dependency from Claim 13.

Applicants respectfully request the Examiner to review these submissions and withdraw this rejection under 35 U.S.C. §103(a).

Rejection of Claims 15, 20, 23, 28, 32 and 37

Claims 15, 20, 23, 28, 32 and 37 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Chu in view of Bortz et al. (U.S. Patent No. 3,662,405; hereinafter, “Bortz”).

In response, Claims 15, 23, 28, 32 and 37 have been cancelled.

Claim 20 is directly dependent from the amended Claim 13.

As discussed above, Chu fails to teach the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium silicate and lithium silicate and the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the coated inorganic adhesive solution, as recited in the amended Claim 13.

Bortz discloses ceramic solution for bone implant materials. However, Applicants submit, Bortz fails to teach the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the inorganic adhesive solution, as recited in the amended Claim 13.

It is therefore submitted that Chu and Bortz, either alone or in combination, can not reach the subject matter claimed in the amended Claim 13, and thus *prime facie* obviousness does not exist regarding the subject matter claimed in Claim 13 with respect to the cited references.

Applicants respectfully submit that the amended Claim 13 is now allowable over Chu and Bortz.

Claim 20 is also believed to be allowable, by means of its direct dependency from Claim 13.

Applicants respectfully request the Examiner to review these submissions and withdraw this rejection under 35 U.S.C. §103(a).

Rejection of Claims 18, 26 and 35

Claims 18, 26 and 35 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Chu in view of Gill.

Claims 26 and 35 have been cancelled.

Claim 18 is directly dependent from the amended Claim 13.

As discussed above, Chu fails to teach the inorganic adhesive solution comprising at least one selected from the group consisting of sodium silicate, potassium silicate and lithium silicate and the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge, as recited in the amended Claim 13.

Gill is directed to environmentally safe silicate binder. However, Gill, either alone or in combinations with Chu, fails to teach *at least* the claimed the claimed curing step in which carbon dioxide gas is introduced into the pores of the polymer sponge to cure the inorganic adhesive solution to cure the coated inorganic adhesive solution, as recited in the amended Claim 13.

It is therefore submitted that Chu and Gill, either alone or in combination, can not reach the subject matter claimed in the amended Claim 13, and thus *prime facie* obviousness does not exist regarding the subject matter claimed in Claim 13 with respect to the cited references.

Applicants respectfully submit that the amended Claim 13 is now allowable over Chu and Gill.

Claim 18 is also believed to be allowable, by means of its direct dependency from Claim 13.

Applicants respectfully request the Examiner to review these submissions and withdraw this rejection under 35 U.S.C. §103(a).

**Conclusion**

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Reconsideration and subsequent allowance of this application are courteously requested.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

The Examiner is invited to contact Applicants' Attorneys at the below-listed telephone number with any questions or comments regarding this Response or otherwise concerning the present application.

Respectfully submitted,

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